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DISCUSSION OF VALUATION AND DEPRECIATION RELATED TO INCOME TAX

(Published in May, 1951)

By George J. Soffer, Eugene L. Grant, and Maurice R. Scharff

POWER DIVISION

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DISCUSSION

GEORGE J. SOFFER[6].—The basic premise of this paper is to treat the cost of income tax as a fixed annual cost. This fundamental assumption must be analyzed in all its details. The first question to be considered is how does this method of computation affect the consumer's rate for power? Evidently, when the annual cost of operating a power plant is increased, then an increase in price to the consumer must result. This is contrary to the purpose of a public utility corporation.

The second question to consider is how will the author's premise affect the basic structure of the income tax? The aim of this tax is to function at that level of income after which all operating expenses have been deducted. Now, if this tax is included in the cost of production, the whole purpose of the income tax is defeated. If this were permitted, then other industries may seek to take advantage of this method of computation.

However, the advantage of using the author's method in preliminary studies and investigations is clearly shown by his excellent example of an engineering economic comparison between a hydroelectric plant with a transmission line and a steam power plant.

EUGENE L. GRANT,[7] M. ASCE.—Two important points in Mr. Scharff's interesting paper might be rephrased as follows:

1. The conclusions of engineering economy studies may be altered by the introduction of income tax considerations. Generally speaking, proposed investments intended to decrease operating expenses are less attractive under income taxation than they would be without income taxes (or would seem to be if income tax considerations were disregarded).
2. Assume that existing fixed assets are appraised at a figure that will make them equally economical with the most economical new substitute assets. Appraised values under this principle will be higher if the income tax aspects of the matter are considered than if income taxes are disregarded.

The first point is recognized by many persons responsible for economy studies in industry and has been discussed in the literature of engineering economy. Although the second point would seem to follow logically from the first, few people seem to be aware of it. He believes that this paper is notable in presenting a formal analysis of this relationship between income taxes and appraisals.

The paper is entirely in a public utility setting and assumes that revenues will just equal costs regardless of what costs may be (including as costs both income taxes and capital recovery with a stipulated return). Doubtless this is the most reasonable single assumption that could be made for a regulated public

NOTE.—This paper by Maurice R. Scharff was published in May, 1951, as *Proceedings-Separate No. 69*. The numbering of footnotes in this Separate is a continuation of the consecutive numbering used in the original paper.

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utility even though it is not inevitable that high costs will result in high revenues and low costs will result in low revenues. However, it is clearly not a reasonable assumption in competitive industry.

If, for example, an electrometallurgical company were comparing the hydro and steam plants in the illustration, the most reasonable assumption would doubtless be that revenues from the sale of metal would be the same regardless of whether hydro or steam power were used in the reduction process. With revenues unaffected by the choice, the difference in taxable income would depend solely on the difference in the expense items deductible for tax purposes. In competitive industry, one important aspect of income tax considerations in economy studies may be the difference between the pay-off period used in the economy study and the life of the proposed fixed assets that will probably be allowed in computing annual depreciation expense for tax purposes. The influence of a proposed plant investment on the excess profits tax base may also require consideration.

It should be recognized, therefore, that the validity of the analysis presented is limited to the public utility setting for which it is given, and that a somewhat different type of analysis of this problem is necessary in competitive industry.

MAURICE R. SCHARFF,[8] M. ASCE.—The analysis in this paper is applicable, completely, only to the public utility industry, where allowable revenue is customarily limited to cost of service, including income taxes. The writer is in agreement with Mr. Grant in this respect. He believes, however, that the analysis has a limited application to competitive industry, particularly, where prices tend to be "administered" rather than to be fixed by free competition. Lewis H. Kimmel states[9] that answers to questionnaires sent to the industrial clients reflected a growing tendency to relate pricing policies to corporate income tax, 59.8% of the answers to the latest questionnaire answering "yes" to the question "Has the corporate income tax consciously influenced your pricing policies?"

The writer also believes that Mr. Grant was too generous in crediting him with the first published statement of the relationship between income taxes and appraisals. Although the disscussion might be considered applicable more directly to the first of the two points formulated in Mr. Grant's discussion rather than to the second (propounded by Alex Bauhan[10]), it at least carries the implication of the same relation of income tax to valuation.

The writer also feels that Mr. Grant's statement that "***proposed investments intended to decrease operating expenses are less attractive under income taxation than they would be without income taxes***" is an understatement of the effect of present high corporate income tax rates in the United States. They amount to confiscating a large proportion of the savings in expense that can be gained by substituting modern efficient equipment for obsolete inefficient equipment, and thus such tax rates discourage replacements and improvements in efficiency.

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[8] Cons. Engr., New York, N. Y.

[9] "Taxes and Economic Incentives," by Lewis H. Kimmel, Brookings Institution Publication, Washington, D. C., 1950, pp. 27–31.

[10] "Interconnection Services, Their Classification and Evaluation," by Alex Bauhan, *Transactions*, Am. Inst. of Elec. Engrs., Vol. 50, 1931, p. 1247.

Mr. Soffer's two questions leave out of account the fundamental nature of the public utility industry and public utility regulation as they have developed under the social and legal institutions in the United States. The increase in utility rates to consumers with increase in cost may be undesirable; but it is inevitable under a system that prohibits competition as a means of regulating utility rates and that, through intervention of the police power, restricts rates to cost of service, including return and income taxes.

Similarly, the passing on of income taxes to consumers, in rates, is a necessary consequence of the method of fixing utility rates and has no application to other industries in which prices are presumably controlled by competition.

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